Oracle America v. Google - Expert Report of Iain Cockburn – September 12, 2011 - Subject to Protective Order
(Contains Confidential and Highly Confidential/Attorneys' Eyes Only Material)

Updated as of September 15, 2011

Exhibit 6
Apportionment Assessment of Patent '104
Reference resolution

Patent Functionality
- The '104 patent provides a means to store numeric references produced by resolving symbolic references and reuse them in future executions of the corresponding instructions. This invention provides a dramatic performance improvement because symbolic name resolution typically requires considerable computation time, whereas using stored numeric references is much faster. [1]
- It does not appear that the functionality of the '205 patent can be employed without the use of the '104 patent. Therefore, it is reasonable to assume that a licensee of the '205 patent would also require access to the '104 patent. [2]

Contemporaneous Evidence
- "Again, as I said at the beginning, we're running on a platform or expecting to run on a platform that looks like what you might have had on your desktop 10 years ago. And, you know, you can see that it's a fairly slow bus, almost no data cache at all and I just wanna re-emphasize that there's very little RAM for an app, for applications once you consider all of the things that your device is doing, say, as a phone. It has to answer phone calls, it has to be able to take and send SMSs. All of these things are essential services as far as the user is concerned." [3]

Benchmarking Evidence
- "Performance analysis documented in Bob Vandette's report […] benchmark testing shows execution speed improvement by as much as a factor of 13." [4]
- Oracle engineers unable to provide a handset with only the '104 patent disabled. Linpack testing shows a five fold increase when enabling the '104 and '205 patent. This test reflects the performance of the Android Dalvik Virtual Machine. Since applications run on this virtual machine, it is also a measure of application performance. [5]
- Disabling the '104 and '205 patents increased camera application launch time by 3.33 seconds. [6]
- Disabling the '104 and '205 patents increased email application launch time by 3.99 seconds. [7]

Econometric Analysis
- Willingness to pay analysis provides evidence that consumers value performance features enabled by patents '104 and '205 as measured by Linpack. [8]
- Speed improvement driven by patent '104 and '205 is associated with an average $31-$37 increase in consumer's willingness to pay for handsets. [9]
- Consumers are less likely to purchase handsets with lower performance. [10]
- Analysis suggests patent apportionment in the range of 30% - 40%. [11]

Conjoint Analysis
- Analysis suggests that consumers value faster phones. [12]
- Analysis of '104 and '205 patents suggests patent apportionment of approximately 22.8%. [13]
- Analysis of '104, '205, and '720 patents suggests patent apportionment of approximately 38.9%. [14]

Opinion
- 25% apportionment
- Estimated patent damages after U.S. adjustment: $168.2 million

Exhibit 6 (continued)
Apportionment Assessment of Patent '104
Reference resolution

<u>Sources:</u>

[1] Mitchell Patent Report, p. 38.

[2] Conversation with Bob Vandette

[3] Google I/O 2008 Video entitled "Dalvik Virtual Machine Internals," presented by Dan Bornstein (Google Android Project) at 19:07 under "Problem: CPU Efficiency" accessed at http://developer.android.com/videos/index.html#v=ptjedOZEXPM.

[4] Mitchell Patent Report, p. 32.

[5] Exhibit 3

[6] Exhibit 4

[7] Exhibit 4

[8] See Appendix C.

[9] See Appendix C.

[10] See Appendix C.

[11] See Appendix C.

[12] Exhibit 4

[13] Exhibit 4

[14] Exhibit 4